



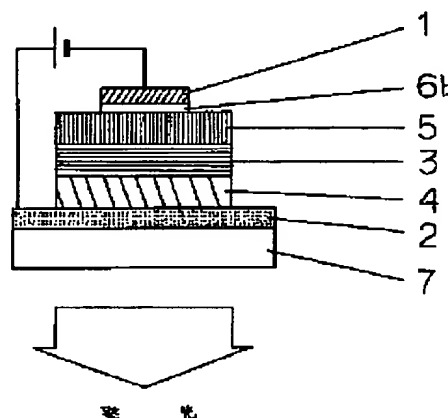
## PATENT ABSTRACTS OF JAPAN

(11) Publication number: **09017574 A**(43) Date of publication of application: **17.01.97**(51) Int. Cl. **H05B 33/14**(21) Application number: **08085743**(22) Date of filing: **14.03.96**(30) Priority: **27.04.95 JP 07127181**(71) Applicant: **PIONEER ELECTRON CORP**(72) Inventor: **WAKIMOTO TAKEO**(54) **ORGANIC ELECTROLUMINESCENCE ELEMENT**

## (57) Abstract:

**PROBLEM TO BE SOLVED:** To provide a stable organic EL element having such high luminous efficiency as to continuously light at high luminance at low applied voltage, by containing an alkaline metal compound in an electron injection layer of the organic electroluminescence element.

**SOLUTION:** An organic EL element has a structure of successively laminating an anode 2, a positive hole transport layer 4 composed of organic compound, a luminous layer 3, an electron transport layer 5, an electron injection layer 6b and a metal cathode 1, on a glass substrate 7. The layer 6b contains an alkaline metal compound particularly an alkaline metal oxide, compound oxide, halide, nitride, etc. These materials have a very small work function, to function as an insulator, but by optimizing a film thickness of the material, the light emission of the element can be made at high luminance. A film thickness of the layer 6b is desired to be set to 1 Angstrom or more (200 Angstrom or less) means film thickness capable of obtaining an electron injection effect. The anode 1 is used with ITO or the like. The cathode 2 is used with Al, Mg, In, Ag, etc., or an alloy thereof, to use a material of increasing a work function of the anode larger than that of the cathode.



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